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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.          | CONFIRMATION NO. |
|--|-------------|----------------------|------------------------------|------------------|
| 10/624,167   | 07/21/2003  | Yigiang Q. Zhao      | 42100-0002<br>(1156.1105101) | 6357             |
| 41018  | 7590        | 04/13/2007           | EXAMINER                     |                  |
| CASSAN MACLEAN<br>307 GILMOUR STREET<br>OTTAWA, ON K2P 0P7<br>CANADA |             |                      | CHOU, ALBERT T               |                  |
|  |             |                      | ART UNIT                     | PAPER NUMBER     |
|  |             |                      | 2616                         |                  |

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE  | DELIVERY MODE |
|--|------------|---------------|
| 3 MONTHS                               | 04/13/2007 | PAPER         |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/624,167

Applicant(s)

ZHAO ET AL.

Examiner

Albert T. Chou

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 101***

1. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-19 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 1 recites a method for sorting a plurality of binary numbers such that said binary numbers can be searched for match between a candidate binary number and one of said plurality of binary number.

Claim 15, however, is simply directed to a mathematical construct or a data structure, which involves no more than a manipulation of an abstract idea (a mathematical algorithm, formula, or calculation), and does not provide a practical application that produces a useful, tangible and concrete result. Therefore, it is considerable non-statutory under 35 U.S.C. 101. See USPTO Interim Guidelines for Patent Subject Matter Eligibility (pp. 18-23).

Claims 2-7 and 16-19 depend from claim 1 and, therefore, are rejected on the same basis of rejection.

Claim 8 recites a method of sorting IP binary addresses in a tree data structure for use in a range search.

Claim 8, however, is simply directed to a mathematical construct or a data structure, which involves no more than a manipulation of an abstract idea (a mathematical algorithm, formula, or calculation), and does not provide a practical application that produces a useful, tangible and concrete result. Therefore, it is considerable non-statutory under 35 U.S.C. 101. See USPTO Interim Guidelines for Patent Subject Matter Eligibility (pp. 18-23).

Claims 9-15 depend from claim 8 and, therefore, are rejected on the same basis of rejection.

### ***Conclusion***

2. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- US Patent No. 6,526,055 to Periman et al. disclose "Method And Apparatus For Longest Prefix Address Lookup"
- US Patent Application Pub. No. 2002/0118682 A1 by Choe discloses "Apparatus And Method For Performing High-Speed IP Route Lookup And Managing Routing/Forwarding Tables"

Art Unit: 2616

- US Patent No. 6,141,738 to Munter et al. disclose "Address Translation Method And System Having A Forwarding Table Data Structure"
- US Patent Application Pub. No. 2003/0091043 A1 by Mehrotra et al. disclose "Methods And Systems For Fast Packet Forwarding"

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Albert T. Chou whose telephone number is 571-272-6045. The examiner can normally be reached on 8:30 - 17:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi H. Pham can be reached on 571-272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Albert T. Chou

April 12, 2007

AC

  
CHI PHAM  
SUPERVISORY PATENT EXAMINER

4/12/07